

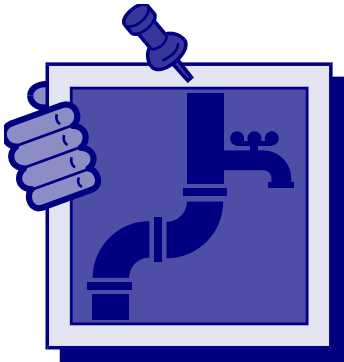


# ***Annual Water Quality Report 2010 Vernon Hills Service Area***

*Lake County, IL  
Department of Public Works*

## **Purpose and Background**

**T**his is the annual water quality report (or consumer confidence report) for the period of January 1 to December 31, 2009. Each year we will issue a report of this type to provide information about the quality of our drinking water as well as details on the source of our water, how it is treated, and what it contains. The reports are being issued in compliance with the requirements of the Safe Drinking Water Act and are also intended to demonstrate our commitment to providing a safe and reliable supply of drinking water.



Since 1992 the County has purchased water from the Central Lake County Joint Action Water Agency (CLCJAWA). CLCJAWA is an intergovernmental cooperative, formed by the communities it serves: Grayslake, Gurnee, Lake Bluff, Libertyville, Mundelein, Round Lake, Round Lake Beach, Round Lake Heights, Round Lake Park, and Lake County representing the unincorporated areas of Knollwood/ Rondout/ South Bradley Road/ Countryside Manor and Wildwood and the Village of Vernon Hills. CLCJAWA operates a water treatment facility which was designed using the best available technologies to ensure that water treated by CLCJAWA will meet all current regulatory and quality standards now and in the foreseeable future.

If you have any questions about this report or your water system, contact Phil Perna at (847) 377-7500 or by e-mail to [pperna@lakecountyil.gov](mailto:pperna@lakecountyil.gov). You may also ask about opportunities for public participation at County Board meetings where decisions are made that affect drinking water quality. We always like to hear from our customers.

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## **The Water Treatment Process**

**W**ater treated by CLCJAWA at the Paul M. Neal Water Treatment Facility in Lake Bluff is pumped from Lake Michigan and then undergoes a treatment process designed to assure constant contaminant removal and production of clean, safe drinking water that is also aesthetically pleasing. There are two features of the treatment process that provide unique capabilities. First, water from Lake Michigan goes through a primary disinfecting step using ozone, which has been found to be highly effective in removing contaminants and in deactivating disease-causing pathogens. And, finally, the treated water passes through filters of granular activated carbon which remove any remaining contaminants and particles from the water and have also proven to be proficient in eliminating problems sometimes encountered with unpleasant tastes or odors.

## **The Water Delivery System**

**M**ore than 750 million gallons of water were delivered to 6,500 customers in Vernon Hills last year. The delivery system includes 90 miles of water main and 6 storage reservoirs holding 3.8 million gallons, or twice our daily demand. As added reliability in an emergency, the former well water system is available to back up the Lake Michigan supply.



## Water Quality

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the US Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline at 1-800-426-4791.

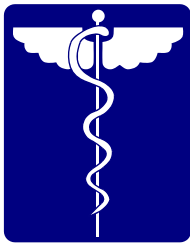


To ensure that tap water is safe to drink, the Environmental Protection Agency prescribes limits on the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Your tap water quality is consistently monitored by the County, by the Illinois Environmental Protection Agency (IEPA), in the CLCJAWA Water Quality Lab, and by several other "third party" labs. This aggressive water quality assurance program is unmatched: bacteriological tests are conducted much more often than required, water clarity is monitored every 6 seconds, and more than 360 contaminants are monitored on a routine basis.

Water quality is judged by comparing your water to USEPA benchmarks for water quality. One such benchmark is called the Maximum Contaminant Level Goal (MCLG). The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. This goal allows for a margin of safety. Another benchmark is a Maximum Contaminant Level (MCL). An MCL is the highest level of a contaminant that is allowed in drinking water. An MCL is set as close to an MCLG as feasible using the best available treatment technology.

Abbreviation	Definition
AL	Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements.
NTU	Nephelometric Turbidity Units is a measure of water cloudiness.
MCL	Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water.
MCLG	Maximum Contaminant Level Goal is the contaminant level below which there is no known or expected health risk.
pCi/L	pico Curies per liter.
pos/month	The maximum number of positive samples collected in a calendar month.
ppb	Parts-per-billion is also referred to as micrograms per liter (µg/L). Equivalent to one ounce in 7,350,000 gallons of water.
ppm	Parts-per-million is also referred to as milligrams per liter (mg/L). Equivalent to one ounce in 7,350 gallons of water.
TT	Treatment Technique refers to a required process intended to reduce contaminant levels in drinking water.



## Health Note

Some people may be more vulnerable to contaminants in drinking water than the general population. *Immuno-compromised* persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The USEPA and Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline at 1-800-426-4791.

## Regulated Contaminants Detected Lake Michigan Water

Compound (Units)	Highest Level Found	Range of Detection	MCLG	MCL (AL)	Violation	Primary Compound Source
Alpha Emitters (pCi/l)	2.6	n/a	0	15	No	Decay of natural deposits
Arsenic (ppb)	1	n/a	0	10	No	Erosion of natural deposits, runoff
Barium (ppm)	0.02	n/a	2	2	No	Erosion of natural deposits, runoff, metal refinery discharge
Beta/Photon Emitters (mrem/yr)	3.9	n/a	0	50	No	Decay of natural deposits
Bromate (ppb)	2.0	0 - 2.0	0	10	No	By-product of disinfection
Combined Radium 226/228 (pCi/l)	1.6	n/a	0	5	No	Decay of natural deposits
Fluoride (ppm)	1.1	0.9 - 1.1	4	4	No	Added for dental health
Sodium (ppm) *	9.0	n/a	None	None	No	Erosion of natural deposits, runoff
Turbidity (% acceptable)	100%	100%	None	0.3 TT	No	Lake sediment, soil runoff
Turbidity (NTU)	0.07	0.03 - 0.10	None	1 TT	No	Lake sediment, soil runoff

Compound (Units)	90th Percentile	# Sites Over Action Level	MCLG	Action Level	Probable Compound Source
Lead (ppb)	6.3	0	0	15	Corrosion of household plumbing
Copper (ppm)	0.028	0	1.3	1.3	Corrosion of household plumbing

## Emergency Back-up Well Water

(Used only in the event of a disruption to the Lake Michigan water supply) \*\*

Compound (Units)	Highest Level Found	Range of Detection	MCLG	MCL (AL)	Violation	Primary Compound Source
Chlorine (ppm)	0.7	0.4 - 0.7	4	4	No	Added for disinfection
Fluoride (ppm)	1.18	1.04 - 1.18	4	4	No	Added for dental health
Arsenic (ppb)	0.67	0.54 - 0.67	0	10	No	Erosion of natural deposits
Gross Alpha (pCi/L)	29.6	19.3 - 29.6	0	15	No	Erosion of natural deposits
Haloacetic Acids (HAA5) (ppb)	5.0	1.91 - 3.8	n/a	60	No	By-product of chlorine disinfection
Sodium (ppm) *	15.82	14.88 - 15.82	n/a	n/a	No	Erosion of natural deposits, runoff
Total Trihalomethanes- TTHM (ppb)	30.2	15.94 - 30.2	n/a	80	No	By-product of chlorine disinfection
Iron (ppm)	0.05929	0 - 0.05929	n/a	1.0	No	Erosion of natural deposits
Barium (ppm)	0.0249	0.02051 - 0.0249	2	2	No	Erosion of natural deposits
Combined Radium 226/228 (pCi/l)	9.7	6.6 - 9.7	0	5	No	Erosion of natural deposits
Nitrate - as N (ppm)	0.718	0.419 - 0.718	10	10	No	Erosion of natural deposits
Uranium (ppb)	0.5513	0.372 - 0.5513	0	30	No	Erosion of natural deposits

\* There is not a state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions.

\*\* No well water was distributed in 2009.

Lake County Public Works Department  
650 Winchester Road  
Libertyville, IL 60048

Phone: 847.377.7500  
Fax: 847.377.7173  
E-Mail: [PublicWorks@lakecountyil.gov](mailto:PublicWorks@lakecountyil.gov)

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## Contaminant Sources in Drinking Water

Our tap water comes from Lake Michigan, a surface water source. With a depth of 900 feet, Lake Michigan is the largest lake in the United States, formed as glaciers retreated north during the last ice age. The Great Lakes contain approximately 20% of the fresh water on Earth's surface. More water evaporates off of Lake Michigan each minute than CLCJAWA pumps in an entire day. Since the United States and Canada formed the Great Lakes Water Quality Agreement in 1972, Great Lakes water quality has steadily improved.

Both tap and bottled water come from rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and can pick up substances from the presence of animal or human activity. Contaminants that may be present in untreated water include:

- Microbial contaminants such as viruses and bacteria can be naturally occurring or may come from sewage treatment plants, septic systems, and livestock operations.
  - Inorganic contaminants such as salts and metals can be naturally occurring or result from urban storm water runoff, wastewater discharges, oil and gas production, mining, or farming.
  - Pesticides and herbicides come from sources such as agricultural and residential storm water runoff.
  - Organic chemical contaminants including synthetic and volatile organic compounds are by-products of industrial processes and petroleum production but can also come from gas stations, urban storm water runoff and septic systems.
  - Radioactive contaminants can be naturally occurring or be the result of oil, gas, and mining activities.
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